

REMARKS

The Office action dated May 26, 2006, has been carefully reviewed and the foregoing amendment has been made in response thereto.

Claim 2 stands rejected under 35 USC 112, second paragraph. Claim 2 has been amended to remove reference to "second output" in accordance with the suggestion of the Office action.

Claims 1 and 17-19 stand rejected under 35 USC 102(b) as anticipated by Maguire et al (USPN 6,093,946). With respect to Claims 1 and 17, the Office action refers to column 3, lines 12-21, column 4, lines 3-29, and Figures 2 and 3 for disclosing an increase in the degree of clutch engagement.

Column 3, lines 12-21 of the '946 patent says that the friction discs of the clutch are heated during engagement and are cooled by fluid flow after engagement or while disengaged. The steel discs provide a heat sink for absorbing heat energy where that heat is transferred to the hydraulic fluid and surrounding metal components. The cited text is entirely silent with respect to changing the degree of clutch engagement.

Column 4, lines 3-29 of the '946 patent discusses measuring temperatures using heat sensors or calculating the temperature of the friction devices. If a shift is requested, it says certain information is read into step 38. Further it says, the computer uses the data in step 38 to calculate the energy transmitted during the shift, passes control to step 42 where temperature differential expected during the shift is calculated. The required heat sink is determined in step 44. The algorithm determines the torque capacity required to complete ratio change, and the heat sink required to absorb the heat that will be generated during the ratio change. From this it can be seen that the cited text is entirely silent with respect to changing the degree of clutch engagement.

Figure 2 of the '946 patent shows in graphical form the steps described in the cited portion of column 4. There is no disclosure in Figure 2 of increasing the degree that clutch engagement to reduce clutch temperature, as the claims define the method and system.

-12-

(Serial No. 10/774,805)

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Similarly, Figure 3 is silent with respect to changing the degree of clutch engagement. Instead, Figure 3 and the '946 patent disclose that if the temperature produced during the shift will exceed a design limit, at step 52, adaptive values including shift time, engine spark timing, and fuel feed are established such that the energy absorbed during the ratio changes does not result in a temperature increase above the design limit. (See column 4, lines 31-42).

Instead of disclosing increasing the degree of clutch engagement to avoid overheating the clutch, the '946 patent discloses the technique of reducing engine output energy during a speed ratio change in transmission 20. The time for the shift, engine spark timing and engine fuel feed are changed to reduce the amount of energy produce by the engine and transmitted through clutch 18 during the shift. This is an entirely different technique than that recited in Claims 1 and 17. There, if the calculated clutch temperature equals or exceeds their reference clutch temperature, the degree of slip across the clutch is decreased by increasing the degree of clutch engagement, thereby reducing the temperature of the clutch. The '946 patent is silent with respect to this technique and teaches a different technique for avoiding clutch heating.

With respect to Claims 18 and 19, the Office action cites a fourth portion of the '946 patent (specifically, column 3, lines 54-62). In the cited text, the '946 patent discloses the technique whereby the CPU controls engine output energy, engagement time of the friction devices, and the rate of pressure change in the friction devices during the engagement for the technique used to avoid overheating the clutch. This section is entirely silent with respect to decreasing clutch slip or increasing the degree of engagement of the clutch, as recited in Claims 1 and 17, from which Claims 18 and 19 depend.

Claims 1-9 and 17-19 stand rejected under 35 USC 103(a) as unpatentable over Salecker et al. (USPN 6,006,149) in view of the '946 patent. The Office action acknowledges that the '149 patent does not teach "increasing the degree of clutch engagement sufficiently to reduce the calculated temperature of the clutch." The Office action then turns to the '946 patent and states that it teaches (at column 3, lines

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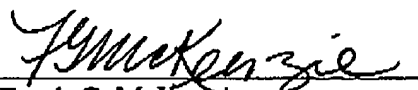
12-21) completely engaging or completely disengaging the clutch discs to avoid heating the clutch system. The cited portion of column 3 is entirely silent with respect to this topic, as discussed above.

The Office action then states that the '946 patent discloses (at column 4, lines 23-29) that the transmission control is accomplished by keeping track of the temperature increase and mitigating any additional heating when the clutch temperature reaches or exceeds the desired clutch temperature limit as shown in Figure 4. The cited section of column 4 is neither discloses nor suggests increasing the degree of clutch engagement to avoid overheating the clutch 18.

The '946 patent describes a technique for reducing engine output energy instead of increasing the degree of clutch engagement or reducing slip across the clutch, as recited in the claims of the present application.

In view of the above remarks and amendments, Claims 1-9, and 17-19 appear now in condition for allowance.

Respectfully submitted,



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